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Descriptions of Japanese Coleophoridae IV

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Abstract *Coleophora quercicola, C. juncivora, C. burhinella, C. laniella,* and *C. cinclella* are described as new to science from Japan, with a record of the first species from South Korea.

Key words Coleophoridae, *Coleophora* n. spp., Japan.

In the present paper are given descriptions of five new *Coleophora* species from Japan, one of which is also recorded from Korea herewith. The type specimens will be deposited in the collections of the Entomological Institute, Hokkaido University, Sapporo, Japan (EHU), U. S. National Museum, Washington D. C., USA (USMN), Prof. K. T. PARK, Kwangeon National University, Chunchon, Korea (KTP), and the senior author (BLDZ).

We are indebted to Drs. Donald R. DAVIS and R. W. HODGES, U. S. National Museum, and Prof. K. T. PARK, Kwangeon National University, for their loan of some material.

Coleophora querciola n. sp.

(Figs. 1－7)

♂, ♀. Expanse, 11－16.5 mm. Antenna white, with well-developed basal hair-bush; flagellum annulated with greyish-brown more distinctly on terminal half. Labial palpus short, white, more or less tinged with yellowish-brown ; median joint roughly as long as diameter of eye ; terminal joint about 1/2 of median joint. Head and thorax white, faintly streaked with yellowish-brown at middle. Fore wing moderate, white in ground, often marked with dark greyish-brown along extreme costa ; streaks along veins and termen brownish-ochreous, rather wide, but degree of its development variable ; costo-apical fringe greyish-ochreous, tipped with white, and lined with dark brownish-grey along its base ; cilia brownish-cinereous, with darker subbasal shade. Hind wing brownish-grey ; cilia brownish-cinereous. Legs and abdomen whitish.

Male genitalia (Figs. 1, 2, 6) : Gnathos globular ; tegumen wide, concave at top in V-shape, supported by short ventral arm ; transtilla heavily chitinized only at mid part, widened basally ; valva elongate, slightly dialted apically ; valvula (Fig. 2) broad suboblong, weaker towards ventral margin, and bristled rather irregularly ; sacculus semiovate, thickened along ventro-terminal margin, and set with a small obtuse process at its truncated terminal end ; aedoeagus short and simple ; cornuti (Fig, 6) thin, thorn-like, 25 or more in number, arranged in a long linear row.

Female genitalia (Figs. 4, 5) : Papilla analis wide and short ; apophysis posterioris about 3 times as long as apophysis anterioris ; subgenital plate (Fig. 5) much shorter than wide, the caudal margin being in a converted W-shape, of which central concavity represents ostium bursae ; some strong spines scattered around lateral edges of ostium bursae ; infundibulum funnel-like ; ductus bursae double-convoluted at middle, the sclerotized posterior half being very narrow with an internal strand, and the transparent anterior half widened ; bursa copulatrix large semiovate ; signum very strong and elongate, curved horn-like, much longer than apophysis anterioris, with developed basal dilation.

Abdominal tergites (Fig. 3) : The 1st tergite set with no or very few spinelets, proximal fold of the caudal rib being thin and complete, while distal fold of it wider on sides, but very weak and occasionally degenerating ; in the following tergites, paired patches of spinelets irregular in shape, somewhat longer than wide.

Mature larval case (Fig. 7) : Blackish pistol-type of about 8 mm long, strongly curved at basal 3/4, covered with yellowish-brown felt at basal tubular part, furnished with a bulged semioval lateral flap on ventral side of curved part and a smaller frontal flap at about middle ; upper edge of knob-like anal part little concave.

Holotype : ♂, Kuzakai, Iwate Pref., Honshu, 2 VII, 1989, T. OKU, from *Quercus mongolica* (EHU).

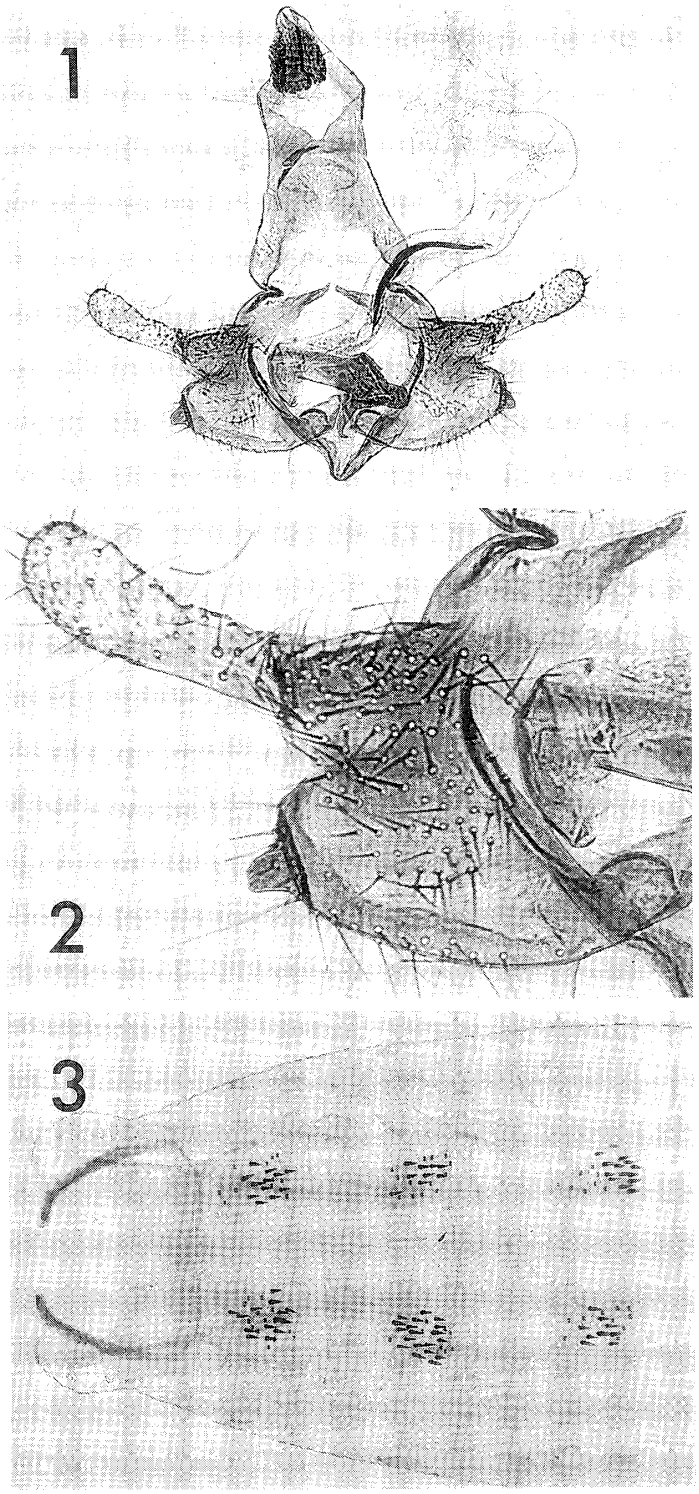
Paratypes : Honshu ; Iwate Pref. − 1 ♀ (1 VII, 1969) Sotoyama, T. OKU (EHU) ; 1 ♂ (18 VII, 1966), 1 ♀ (23 VI, 1967), 2 ♀ (22 VI − 5 VII, 1968), 3 ♂ 2 ♀ (2 − 5 VII, 1989) Kuzakai, T. OKU, from *Quercus mongolica* (1 ♂, BLDZ ; others, EHU) ; 1 ♀ (2 VII, 1967) Morioka, T. SATO, from *Q. mongolica* (BLDZ) ; Gifu Pref.−1 ♂ (24 VIII, 1954) Hida, Takayama, S. ISSIKI (USNM). South Korea−1 ♂ (23 VIII, 1985) Mt. Jiri, Mogodon, K. T. PARK (KTP).

Host plant : *Quercus mongolica.*

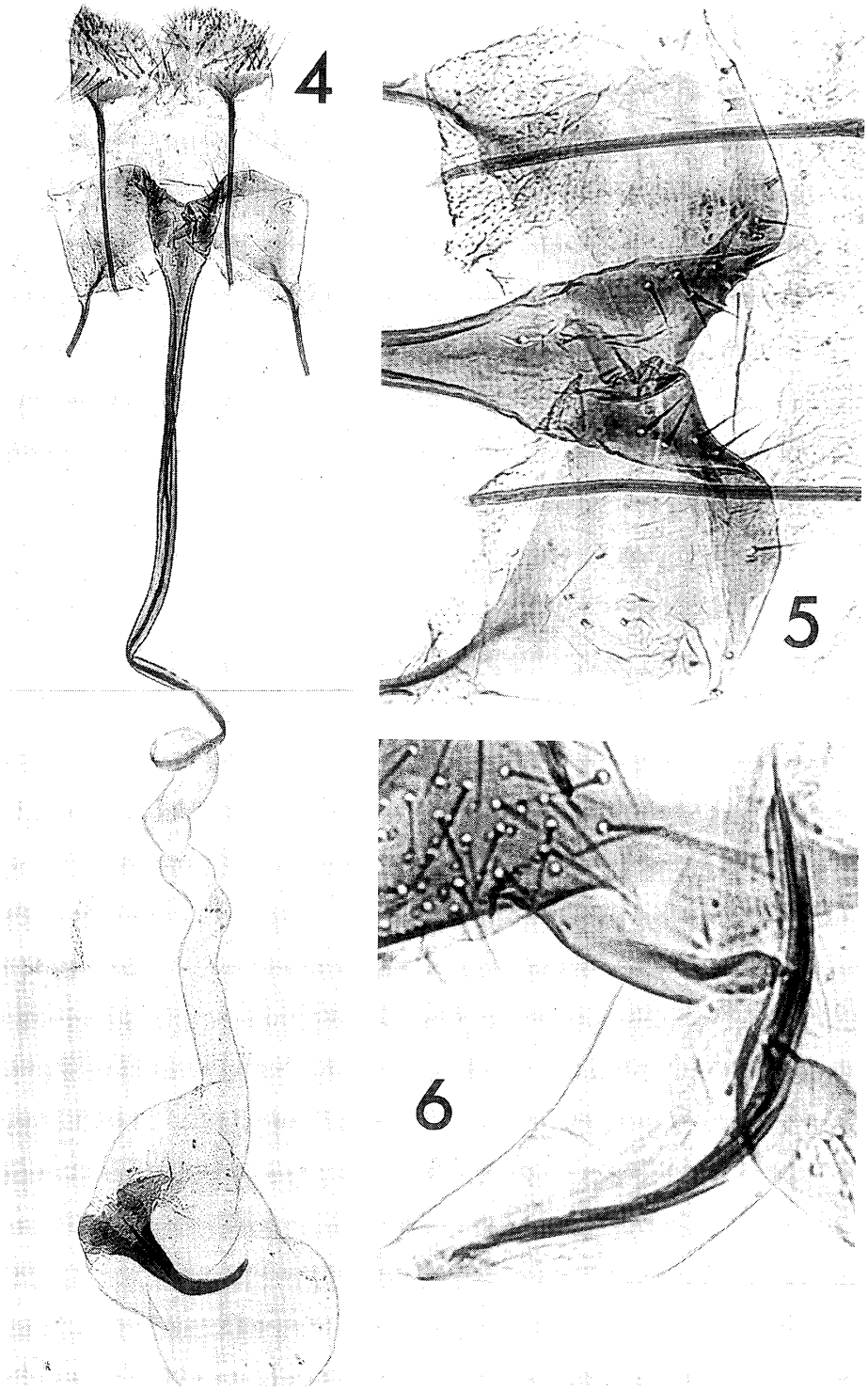
Distribution : Japan (Honshu) and South Korea.

Remarks. The present new species belongs to the 16th species group of *Coleophora* (TOLL, 1952), which is represented by so-called pistol casebearers. In the genitalic structure, this species is similar to *C. zelleriella* HEINEMANN (=*platyphyllae* OKU), of which the genitalia were illustrated by OKU (1965) and BALDIZZONE (1981). However, *C. quercicola* clearly differs from *C. zelleriella* in the V-shaped top of tegumen in male, and in much elongate and strong signum in female. Furthermore, some differences seen in valva, sacculus, ostium bursae, etc., would be helpful for separation of them.

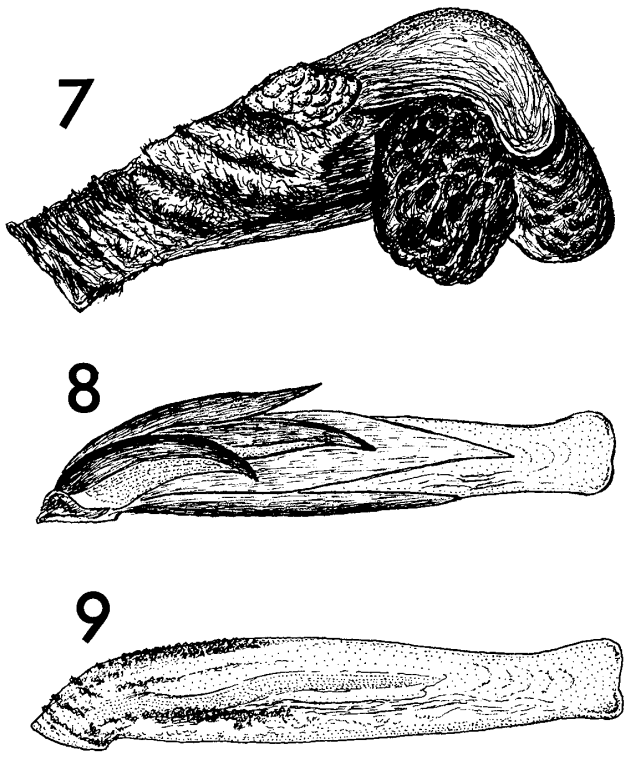
In Japan there have been known three *Quercus*-feeding pistol casebearers, of which larval cases are quite similar to each other. We could not find reliable



Figs. 1 – 3. *Coleophora quercicola* n. sp. 1. Male, genitalia in caudal view (PG-Bldz 8313) ; 2. *Ditto,* clasping organs enlarged ; 3. *Ditto,* anterior abdominal segments.



Figs. 4－6. *Coleophora quercicola* n. sp. 4. Female, genitalia in ventral view (PG-Bldz 8314) ; 5. *Ditto,* subgenital plate enlarged ; 6. Male, cornuti enlarged (PG-Bldz 8313).



Figs. 7－9. Mature larval cases of *Coleophora* n. spp. 7. *C. quercicola* n. sp. ; 8. *C. juncivora* n. sp., before hibernation ; 9. *Ditto,* after hidernation.

distinctive characters of larval case between *C. currucipennella* ZELLER and the present form. *C. melanographa* MEYRICK is, on the other hand, separable from them by the knob-like anal part of larval case, of which the upper edge is concave behind the curved part (BALDIZZONE and OKU, 1989).

Coleophora juncivora n. sp.
(Figs. 8－15)

♂, ♀. Expanse, 9.5－10.5 mm. Antenna simple, dull creamy-white without darker annulation. Labial palpus creamy-white, streaked with greyish-brown externally ; median joint about 1.5 times as long as diameter of eye, with short ventro-apical tuft ; terminal joint slightly shorter than median joint. Fore wing moderate, ochreous-brown in ground, more or less deeper in colour towards apex, widely streaked with creamy white along veins and wing margins, and scattered with greyish-brown sacles especially in outer half of costal area ; these scales often obscure and merged into ground colour ; cilia yellowish-white. Hind wing pale brownish-grey ; cilia cinereous-white, tinged with brownish-yellow towards apical part of wing. Legs ochreous-white, streaked with greyish-brown along hind tibia externally. Abdomen ochreous-white.

Male genitalia (Figs. 10, 11) : Gnathos globular ; tegumen constricted above middle rather strongly, with elongate ventral arm, of which upper half is narrow and lower half is expanded outwards in a subtriangular shape with one of angles at upper terminal end ; transtilla strong, separated into paired robust lobes, which decline towards central interruption ; valva rather short, suboblong ; valvula narrow and elongate, densely bristled ; sacculus rhomboidal in shape, slightly dentate along terminal margin, furnished with a small out-turned tooth immediately below its dorso-terminal angle and with another similar tooth below the foregoing one (Fig. 11) ; aedoeagus rather long and sinuate, the longer prong ending in an up-turned bifurcate hook and the shorter prong in a simple hook (Fig. 11) ; cornuti strong thorn-like, about 12 in number, arranged in a compact row.

Female genitalia (Figs. 13－15) : Papilla analis acuminate, much slender ; apophysis posterioris about 1.5 times as long as apophysis anterioris ; subgenital plate trapezoidal, wider than long, weakly sclerotized, and deeply cleft at middle by U-shaped ostium bursae, of which caudal end is set with stout spines of different lengths on both sides ; infundibulum (Fig, 14) large amphora-like in shape, the tubular posterior part being darkened by heavier chitinization, and the circular anterior part semitransparent ; ductus bursae containing very thick internal strand at its entrance, wide until a bulged convolution beyond middle, which is slightly sclerotized and densely dotted with darkened internal grains ; beyond this ductus bursae narrowed ; bursa copulatrix small, spherical, having horn-like signum and an ovate dentate plate (Fig. 15).

Mature larval case (Figs. 8, 9) : Slender tubular-type with trilobed anal end, about 6.5 mm long, light greyish-ochreous, usually scattered with some reddish-grey particles at basal half ; host perianths set on mouth of case to cover case-body (Fig. 8), but they detached off during hibernation (Fig. 9).

Holotype : ♂, Bonbana, at foot of Mt. Iwate, Iwate Pref., Honshu, emerg. 21 VIII, 1969, T. OKU, from *Juncus krameri* (EHU).

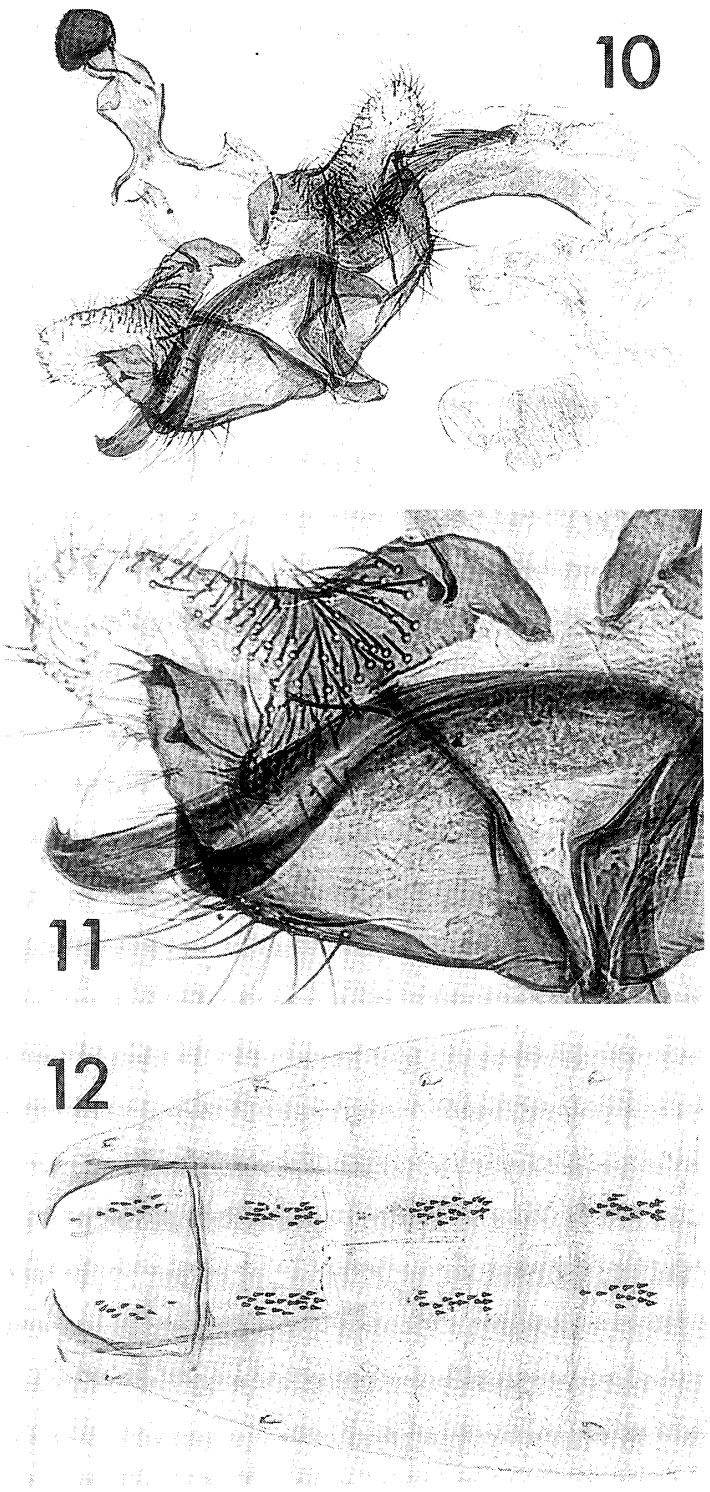
Paratypes : 1 ♂ 4 ♀ (emerg. 21－22 VIII, 1969) same locality as holotype, T. OKU, from *Juncus krameri* and *J. leschenaultii* (1 ♂ 1 ♀, BLDZ ; others, EHU).

Host plant : *Juncus krameri* and *J. leschenaultii.*

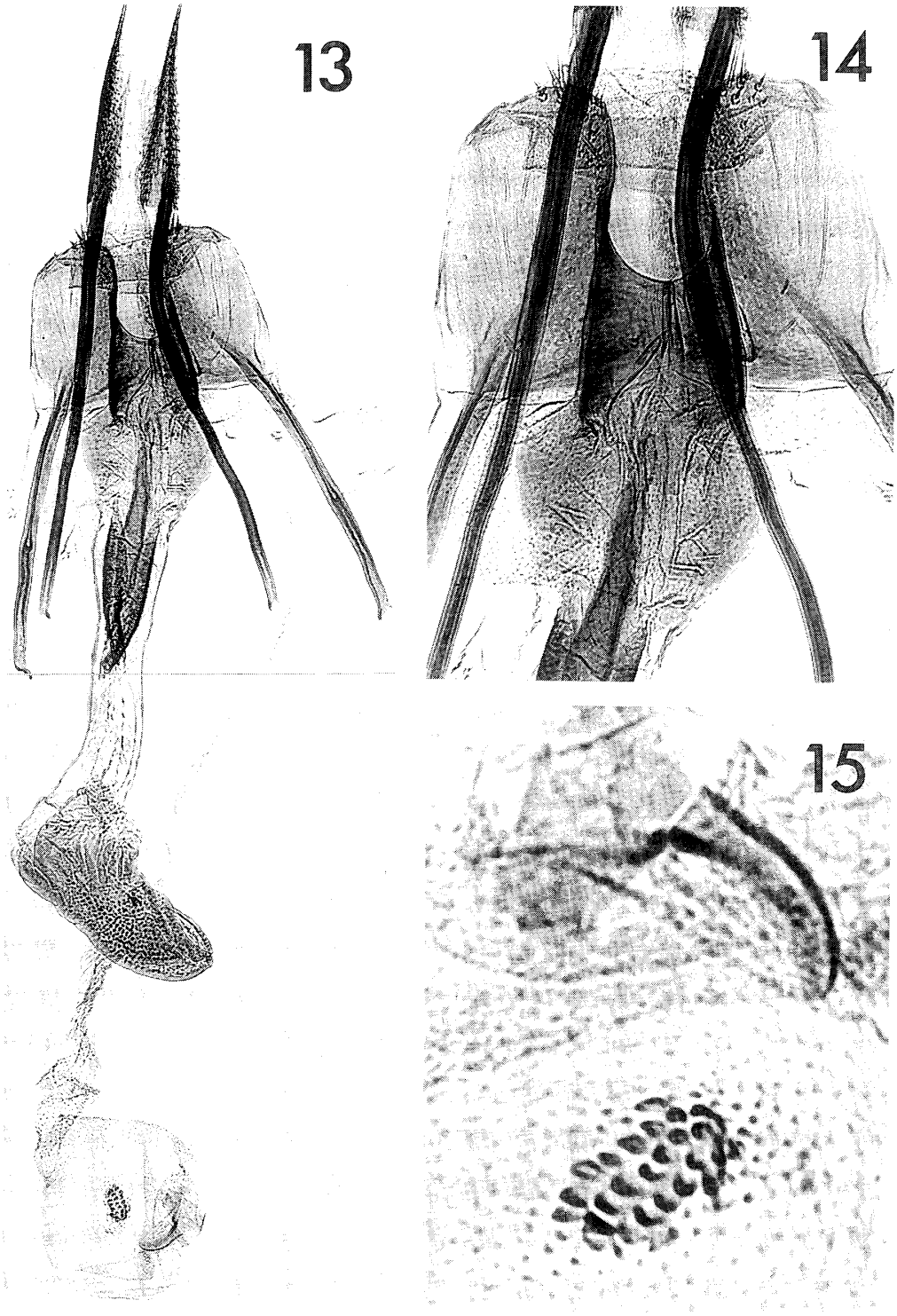
Distribution : Japan (Honshu).

Remarks. Judging from the affinity in structure of genitalia, this new species is closely related to *Coleophora glaucicolella* WOOD, a well-known *Juncus*-feeder in western Eurasia, but it is distnict from the latter by the following points : in male, longer and more strongly sinuate aedoeagus, and longer cornuti brought into a compact row ; in female, widely opened caudal end of ostium bursae, and presence of a dentate plate on bursa copulatrix. *C. juncivora* is included in the *caespititiella*-section of the 30th species group of the genus in the sense of TOLL(1952), although his *caespititiella* should be identified with *C. alticolella* ZELLER (BRADLEY, 1955).

Full-grown larvae fed on *Juncus*-seeds during autumn in a swampy wood.



Figs. 10 – 12. *Coleophora juncivora* n. sp. 10. Male, genitalia in caudal view (PG-Bldz 8337) ; 11. *Ditto,* clasping organs and aedoeagus enlarged ; 12. *Ditto,* anterior abdominal segments.



Figs. 13－15. *Coleophora juncivora* n. sp. 13. Female, genitalia in ventral view (PG-Bldz 8338) ; 14. *Ditto,* subgenital plate enlarged ; 15. *Ditto,* signum and attendant dentate plate enlarged.

Coleophora burhinella n. sp.
(Figs. 16 – 18)

♂. Expanse, 10.5 mm. Antenna simple ; scape brownish-white ; flagellum white, annulated with greyish-brown indistinctly on a few basal joints and distinctly further over. Labial palpus greyish-brown externally ; median joint edged with white above and beneath, somewhat longer than diameter of eye, with short ventro-apical tuft ; terminal joint slightly shorter than median joint. Head and thorax pale ochreous-grey. Fore wing moderate, pale ochreous-brown in ground, tinged with grey towards apex ; whitish streaks along veins and wing margins present, but suffused with ground colour around apex and much obsolete at costo-basal area ; cilia pale ochreous-grey. Hind wing and its cilia pale brownish-grey. Legs light brownish-grey externally, apart from whitish-ochreous hind tibia, which is streaked with greyish-brown.

♀ unknown.

Male genitalia (Figs. 16, 17) : Gnathos globular ; tegumen concave at top in V-shape, strongly constricted above middle, with rather long ventral arm, of which upper 1/3 is narrowed ; transtilla narrow, very thin at middle ; valva semiovate ; valvula developed and bristled, but its inner edge indistinct ; sacculus small and short, semi-trapezoidal, gradually narrowed towards heavily sclerotized terminal part, of which outer edge is oblique, denticulate at upper half, with a short conical process and a spined obtuse projection at dorsal and ventral ends, respectively ; aedoeagus rather short and wide, articuate, weakly sclerotized except for partial heavy chitinization at base and along upper edges of paired prongs, both of which have several triangular teeth dorsally ; cornuti 4 in number, very large, nail-like, and separated, one of the curved anterior two being shorter than the other.

Abdominal tergites (Fig. 18) : The 1st tergite broken ; paired patches of spinelets in the following tergites rather irregular in shape, more than twice longer than wide.

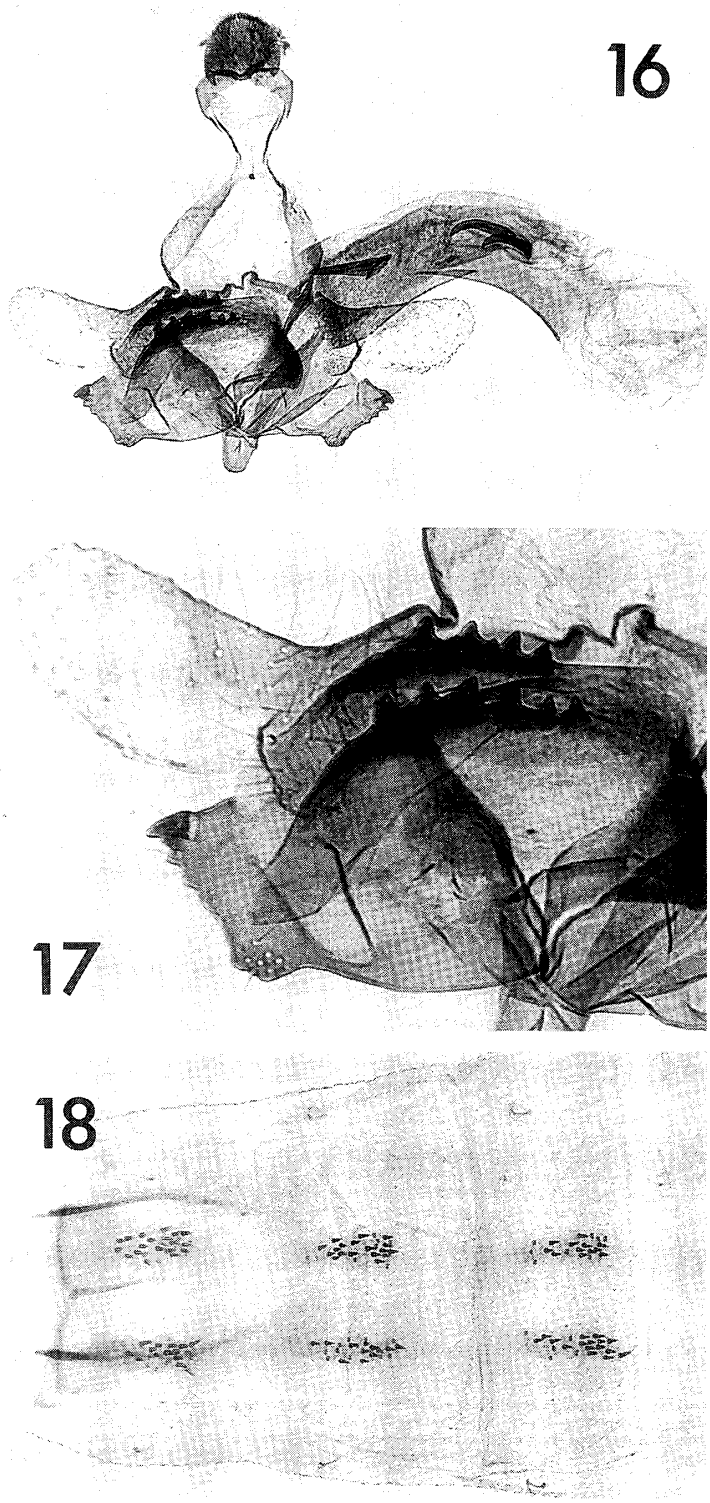
Holotype : ♂, Hashimoto, Kinki-Kii (Wakayama Pref.), Honshu, 19 IV, 1920, S. ISSIKI (USNM).

Host plant : Unknown.

Distribution : Japan (Honshu).

Remarks. This species resembles *Coleophora murinipennella* DUPONCHEL of the 30th species group of the genus, in having small semi-trapezoidal sacculus, weakly chitinized main body of aedoeagus, and large nail-like cornuti. However, they are clearly separated from each other as follows.

	burhinella	*murinipennella*
Valva	obviously narrowed towards base	little narrowed towards base
Valvula	distinctly edged only out-wards	distinctly edged in- and outwards
Aedoeagus	with several dorsal teeth	with a single dorsal tooth
Cornuti	4 in number	9 in number



Figs. 16－18. *Coleophora burhinella* n. sp. 16. Male, genitalia in caudal view (PG-Bldz 6961) ; 17. *Ditto,* clasping organs and aedoeagus enlarged ; 18. *Ditto,* anterior abdominal segments (the 1st segment missed).

Coleophora laniella n. sp.
(Figs. 19–22)

♂. Expanse, 12.5 mm. Antenna simple ; scape pale greyish-brown ; flagellum cinereous-white, distinctly annulated with greyish-brown. Labial palpus brownish-grey, much paler towards tip, clearly edged with white beneath at basal 2/3 of median joint, which is about 1.5 times as long as diameter of eye, with short ventro-apical tuft, terminal joint about a half of median joint. Head and thorax pale cinereo-ochreous. Fore wing rather elongate, greyish-ochreous in ground, darker-shaded along costa up to basal 2/3, and sparsely scattered with dark brownish-grey scales especially on terminal half ; cilia light greyish-brown. Hind wing pale brownish-grey ; cilia light brownish-cinereous, darker around apex of wing.

♀ unknown.

Male genitalia (Figs. 19, 20, 22) : Gnathos globular ; tegumen slightly constricted above middle, with rather wide ventral arm ; transtilla very wide, composed of a pair of subtriangular plates, which are fused with one another at upper ends ; valva short, subtriangular with rounded top, slightly narrowed at base ; valvula (Fig. 20) small but distinct, and bristled towards obtuse lower end ; sacculus suboblong, with an acuminate process and another obtuse one at dorsal and ventral ends of terminal margin, respectively ; aedoeagus rather long, strongly curved at basal 1/3, one of the prongs being set with two dorsal teeth, of which smaller one is nearer to apical end, and the other prong having a single subapical tooth ; cornutus (Fig. 22) elongate thorn-like.

Abdominal tergites (Fig. 21) : The 1st tergite with a pair of irregular rows of about 10 spinelets, the caudal rib having a proximal fold distinct only at mid half, and a weak distal fold ; paired patches of spinelets in the following tergites rather small, irregular in shape and in number of component setae.

Holotype : ♂, Iwawakisan, Kinki (Wakayama Pref.), Honshu, 28 IX, 1951, S. ISSIKI (USNM).

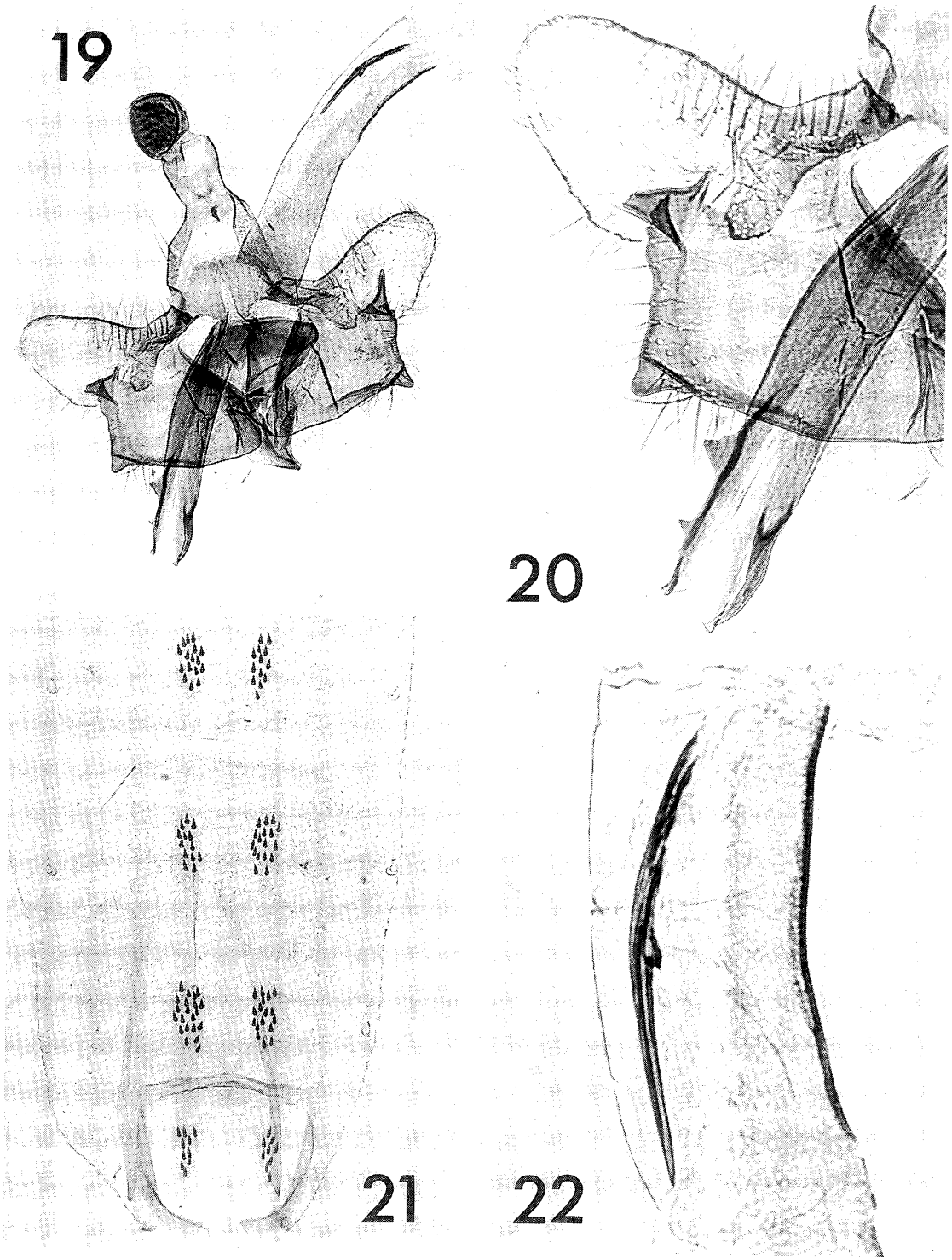
Host plant : Unknown.

Distribution : Japan (Honshu).

Remarks. This species apparently belongs to the 30th species group of *Coleophora* defined by TOLL (1952), but its position within the group is still uncertain. Although *C. laniella* is similar to *C. acutiphaga* BALDIZZONE (1982a) in the shape of valva and sacculus, it is distinct from the latter by the extremely wide transtilla and the single cornutus.

Coleophora cinclella n, sp.
(Figs. 23–25)

♂. Expanse, 13 mm. Antenna simple ; scape light brownish-grey ; flagellum dull ochreous-white, distinctly annulated with brownish-grey. Labial palpus light brownish-grey externally, faintly edged with ochreous-white above and beneath ;



Figs. 19－22. *Coleophora laniella* n. sp. 19. Male, genitalia in caudal view (PG-Bldz 6859) ; 20. *Ditto,* clasping organs and apical part of aedoeagus enlarged ; 21 *Ditto,* anterior abdominal segments.

median joint about 1.5 times as long as diameter of eye, with ventro-apical tuft hardly reaching middle of terminal joint, which is about a half of median joint. Head and thorax bronzy brownish-grey, mixed with dull ochreous-white on sides. Fore wing rather broad, deep greyish-brown in ground, much overspread with ochreous-brown scales, leaving irregular spaces of ground colour around apex and along costa and dorsum at terminal half ; costo-apical fringe lighter greyish-brown ; cilia brownish-grey, mixed with ochreous-scales along terminal line of wing. Hind wing and its cilia brownish-grey. Legs greyish-brown externally ; hind tibia margined with whitish-ochre, and hind tarsi spotted with same colour.

♀ unknown.

Male genitalia (Figs. 23, 24) : Gnathos oval ; tegumen constricted at upper 1/4, with very long ventral arm ; transtilla narrow and strongly chitinized towards its central interruption ; valva narrow and much elongate, circularly expanded at apical part, set with long dorsal hairs ; valvula little specialized, merely indicated by a bristled space at base of valva ; sacculus elongate subtriangular, its heavily sclerotized terminal end forming a large blunt process with rounded top ; a long and arcuate dorsal projection arising from mid part of sacculus to form a semicircle by itself and upper margin of sacculus ; aedoeagus long and slender, asymmetrically bifurcate, the longer prong being simple with acute tip and the shorter prong set with a triangular apical tooth above ; cornutus very long and thin.

Abdominal tergites (Fig. 25) : The 1st tergite with a pair of irregular rows of several spinelets, the caudal rib having narrow proximal and distal folds, which are degenerated on both sides ; paired patches of spinelets in the following tergites very narrow, much compact, composed of more than 25 setae.

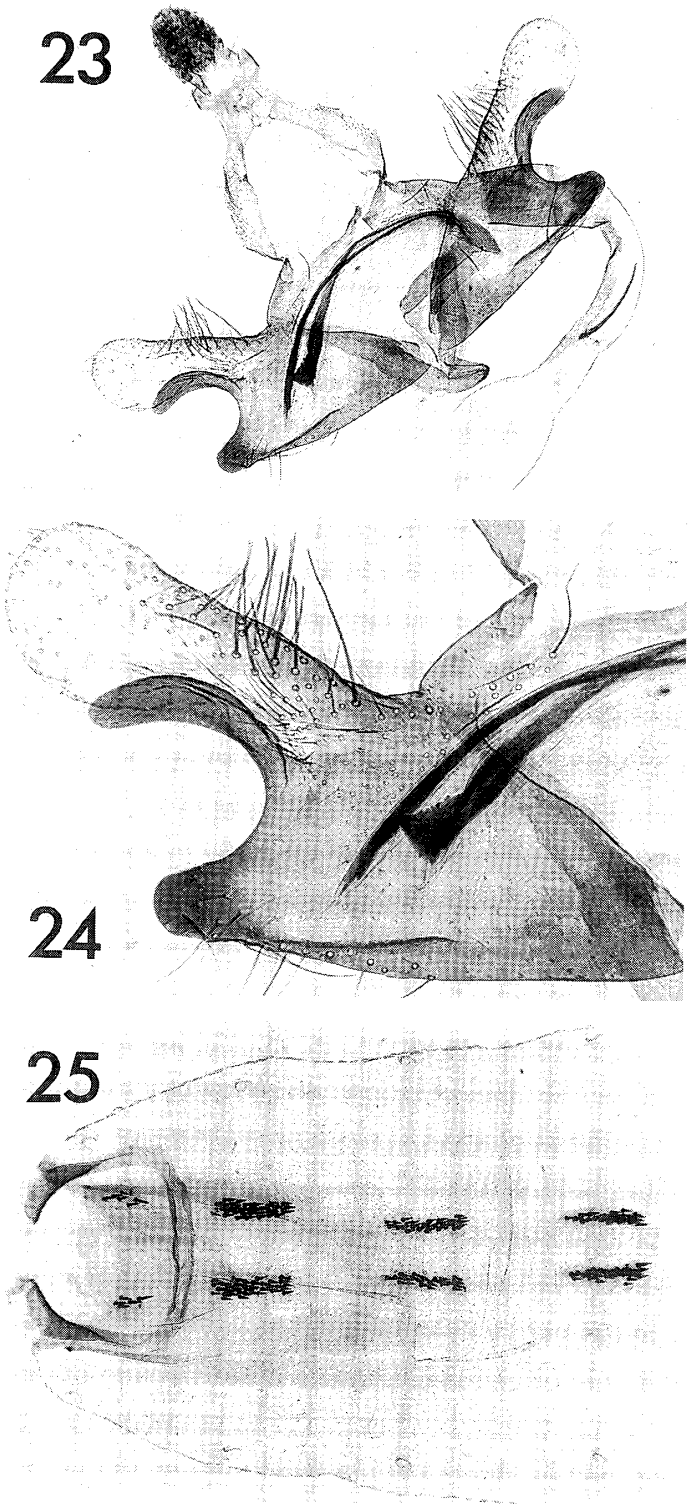
Holotype : ♂, Hoki-Daisen, Honshu-Seibu (Tottori Pref., western Honshu), 14 VII, 1950, S. ISSIKI (USNM).

Host plant : Unknown.

Distribution : Japan (Honshu).

Remarks. The general feature of genitalia indicates that *Coleophora cinclella* n. sp. is included in the *troglodytella*-section of the 30th species group defined by TOLL (1952). As *C. troglodytella* DUPONCHEL was sunk into a junior synonym of *C. follicularis* VALLOT (KARSHOLT *et al.*, 1985), this subgroup must be called the *follicularis*-section. Within the section, there have been known several species, which have a long out-curved dorsal projection of sacculus, and they represent the subsection 'A' by TOLL (1952). *C. cinclella* n. sp. most resembles *C. calandrella* BALDIZZONE (1982b) from Morokko among them, in possession of much elongate valva. However, they can be distinguished as follows.

	cinclella	*calandrella*
Transtilla	narrowed centrally	broadened centrally
Sacculus	longer ; the dorsal projection narrowed towards base	shorter ; the dorsal projection little narrowed towards base
Aedoeagus	one of prongs set with an apical tooth	each of prongs set with a median tooth
Cornutus	longer than dorsal projection of sacculus	shorter than dorsal projection of sacculus



Figs. 23 – 25 *Coleophora cinclella* n. sp. 23. Male, genitalia in caudal view (PG-Bldz 6851) ; 24. *Ditto,* clasping organs and apical part of aedoeagus enlarged ; 25. *Ditto,* anterior abdominal segments.

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摘　　要

日本産ツツミノガ科の記載　IV　（G. BALDIZZONE・奥　俊夫）

下記のツツミノガ科5新種を記載した．

Coleophora quercicola BALDIZZONE et OKU　ミヤマピストルミノガ（新称）

幼虫はミズナラの葉面を食し潜葉習性を示さず，筒巣は黒色のピストル状．台尻に相当する尾端部上縁に凹みを欠く点でカシワピストルミノガと異なるが，ナラピストルミノガとの判別は困難．成虫は7月に出現，触角基部の毛束が発達し，白色の前翅に黄土褐色の条紋を有する点で外観は上記2種に酷似するが，交尾器は明らかに異なる．岩手県の山地及び岐阜県高山で発見．

C. juncivora BALDIZZONE et OKU　コウガイゼキショウツツミノガ（新称）

幼虫は秋に林間湿地でコウガイゼキショウ類の実を食し，筒巣は細長く，明るい灰黄土色，越冬前には寄主植物の花被が付着している．成虫は8月に出現，触角に暗色輪紋を欠き，黄土褐色の前翅にはかなり幅広い白条を有し，灰褐色の鱗片を多少とも散在する．後翅は淡灰褐色．岩手県の山地で発見．

以下の3種は故一色周知教授が採集された米国国立博物館所蔵の標本によるもので，寄主不明の各1雄を検したのみであるため，和名を与えることは差し控える．

C. burhinella BALDIZZONE et OKU

成虫，触角の暗色輪紋は基部2～3節では不鮮明．前翅は黄土褐色，白条は基部側前縁寄りと翅頂周辺では退化する傾向が強い．後翅は淡灰褐色．雄交尾器のaedoeagus上縁に数個の三角条突起が並び，cornutiが著しく大きいことが特徴．4月に和歌山県橋本で採集されている．

C. laniella BALDIZZONE et OKU

成虫，触角の暗色輪紋は鮮明．下唇鬚は長く，中節下方の白い縁取りが目立つ．前翅は比較的細長く灰黄土色，白条を欠き，暗褐灰色の鱗片を散在する．後翅は淡灰褐色．雄交尾器のtranstillaが著しく幅広い板状をなすことが特徴．9月に和歌山県岩湧山で採集されている．

C. cinclella BALDIZZONE et OKU

成虫，触角の暗色輪紋は鮮明．下唇鬚中節先端下方の毛束はよく突出し，末端節の約半分に達する．前翅はやや幅広く，暗灰褐色の地に黄土褐色の鱗片を密に装うが，外側半分，特に翅頂部と翅縁寄りでは部分的にこの鱗片を欠くため，地色が不規則な斑状に現われる．後翅は灰褐色．7月に鳥取県大山で得られている．

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